

NGUYEN Quang-Duy



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Education

- 2017 – 2020 **PhD in Computer Science**
École Doctorale des Sciences Pour l'Ingénieur, University Clermont-Auvergne, France
UR TSCF, MathNUM département, INRAE (Irstea), Clermont-Ferrand, France
PhD defense : 16/07/2020
- 2014 – 2015 **Master 2 in Networks and Communicating Systems**
University Claude Bernard Lyon I, France
Note : 15.31/20.00 - Rank : 1/60
- 2013 – 2014 **Master 1 in Computer Science**
Institute Francophone for Information Technology (IFI), Hanoi, Vietnam
Note : 14.20/20.00
- 2007 – 2012 **Engineer of Information Technology in Computer Engineering**
Hanoi University of Science and Technology, Vietnam
Note : 14.96/20.00

Experience

- 12/2021 – present **Postdoctoral Researcher**
LSEA laboratory, CEA List, Palaiseau, France
Project : Tools and Methods for System Complex Engineering in Industrie 4.0
Keywords : I4.0, LocalSEA testbed, OPC UA, TurtleBot3, Niryo Ned, ROS
- 10/2020 – 09/2021 **Postdoctoral Researcher**
LTCL laboratory, Télécom-Paris, Palaiseau
Project : OPC-UA PubSub for Caméléon
Keywords : IIoT, SNCF, OPC UA PubSub, Embedded System, Zephyr OS, Node-RED, C
- 01/2017 – 07/2020 **PhD Student**
UR TSCF, MathNUM département, INRAE
Project : ConnecSens, AgroTechnoPôle
Keywords : Agriculture, IoT, Ontology, Reasoning, OWL, SWRL, Java, Python
- 08/2016 – 10/2016 **Research Engineer**
Programmation, Networks and Systems team, LaBRI laboratory, Bordeaux, France
Project : Le Palais de la Mémoire
Keywords : Sounds, Method of Loci, Distributed Algorithms, Beacons, BLE, Android
- 04/2015 – 07/2016 **Master 2 Intern / Research Engineer**
Networks team, ICube laboratory, Strasbourg, France
Project : FIT/IoT-lab
Keywords : Multihoming, Mobility, Contiki, TelosB, Python, C/C++
- 01/2014 – 07/2014 **Master 1 Intern**
Institute Francophone for Information Technology
Project : Modeling and Diffusion of Mobile Users Profile
Keywords : Participative Detection, Modeling, Android, GAMA Platform, GAML

Publications*

[CI.7] **Quang-Duy Nguyen**, Saadia Dhouib, Kunal Suri, and Fadwa Tmar, "From Requirement Specification to OPC UA Information Model Design : A Product Assembly Line Monitoring Case Study", Proceedings of the 20th IEEE International Conference on Industrial Informatics (INDIN), Perth, Australia, 07/2022

[CI.6] **Quang-Duy Nguyen**, Patrick Bellot, and Pierre-Yves Petton, "An OPC UA PubSub Implementation Approach for Memory-Constrained Sensor Devices", Proceedings of the 31st IEEE International Symposium on Industrial Electronics (ISIE), Anchorage, United States, 06/2022

[CI.5] **Quang-Duy Nguyen**, Fadwa Tmar, Yining Huang, and Saadia Dhouib, "Early Lessons Learned from the Development of a Local OPC UA-based Robotic Testbed for Research", Proceedings of the 31st IEEE International Symposium on Industrial Electronics (ISIE), Anchorage, United States, 06/2022

[CI.4] **Quang-Duy Nguyen**, Saadia Dhouib, Jean-Pierre Chanet, and Patrick Bellot, "Towards a Web-of-Things Approach for OPC UA Field Device Discovery in the Industrial IoT", Proceedings of the 18th IEEE International Conference on Factory Communication Systems (WFCS), Pavia, Italy, 04/2022

[CI.3] **Quang-Duy Nguyen**, Catherine Roussey, Patrick Bellot, and Jean-Pierre Chanet, "Stack of Services for Context-Aware Systems : An Internet-Of-Things System Design Approach", Proceedings of the 15th IEEE International Conference on Computing and Communication Technologies (RIVF), Hanoi, Vietnam, 08/2021

[JI.2] Julian Eduardo Plazas, Sandro Bimonte, Christophe de Vault, Michel Schneider, **Quang-Duy Nguyen**, Jean-Pierre Chanet, Hongling Shi, Kun Mean Hou, and Juan Carlos Corrales, "A Conceptual Data Model and its Automatic Implementation for IoT-Based BI Applications : UML Profile and MDA Approach", IEEE Internet of Things Journal, 10/2020

[T.1] **Quang-Duy Nguyen**, "Interoperability and Upgradability Improvement for Context-Aware Systems in Agriculture 4.0", PhD thesis, University Clermont-Auvergne, France, 07/2020

[CF.2] **Quang-Duy Nguyen**, Catherine Roussey, Maria Poveda-Villalón, Christophe de Vault, Jean-Pierre Chanet, and Camille Noûs, "CASO et IRRIG deux ontologies pour le développement de systèmes contextuels : cas d'usage sur l'automatisation de l'irrigation", Proceedings of le 31es journées francophones d'Ingénierie des Connaissances (IC), Angers, France, 07/2020

[JI.1] **Quang-Duy Nguyen**, Catherine Roussey, Maria Poveda-Villalón, Christophe de Vault, and Jean-Pierre Chanet, "Development Experience of a Context-Aware System for Smart Irrigation using CASO and IRRIG ontologies", Special Issue "Semantic Technologies Applied to Agriculture", MDPI Applied Science Journal, 03/2020.

[CI.2] Maria Poveda-Villalón, **Quang-Duy Nguyen**, Catherine Roussey, Christophe de Vault, and Jean-Pierre Chanet, "Ontological Requirement Specification for Smart Irrigation Systems : A SOSA/SSN and SAREF Comparison", Proceedings of the 9th International Semantic Sensor Networks Workshop, 17th International Semantic Web Conference (ISWC), Monterey, United States, 10/2018

[CF.1] Maria Poveda-Villalón, **Quang-Duy Nguyen**, Catherine Roussey, Christophe de Vault, and Jean-Pierre Chanet, "Besoins ontologiques d'un système d'irrigation intelligent : Comparaison entre SSN et SAREF", Proceedings of le 29es journées francophones d'Ingénierie des Connaissances (IC), Nancy, France, 07/2020

[CI.1] **Quang-Duy Nguyen**, Julien Montavont, Nicolas Montavont, and Thomas Noël, "RPL Border Router Redundancy in the Internet of Things", Proceedings of the 15th International Conference on Ad-Hoc Networks and Wireless (Adhoc-Now), Lille, France, 07/2016

Summary

First-authored items : 9/12

Citations : 35

H-index : 4

I-index : 2

Items by domains of interest :

IoT (6), I4.0 (3), WSN (4),

OPC UA (4), KR&R (5)

Source: Google Scholar

Research Skills

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|-----------------------|---------------------|
| Project Management | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| System Implementation | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Scientific Writing | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Presentation | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |

Linguistic

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|------------|---------------------|
| French | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| English | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Vietnamese | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |

Technical Skills

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|---------------------|---------------------------------|
| Development Process | Mini-Waterfall, LOT, Agile |
| Operating System | Linux, Zephyr, Contiki, Android |
| Network Protocol | TCP/IP, OPC UA PubSub, MQTT |
| Vocabulary | SOSA/SSN, CASO, IRRIG, AAS |
| Tool | Protégé, GIT, Latex, Wireshark |

Programming

| | |
|----------------|---------------------|
| C/C++ | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Java | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Python | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Shell script | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |
| Query language | ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ |

References

- **Dr. Saadia DHOUIB**, Senior researcher and project manager in LSEA, DILS department,CEA List
Direct supervisor in the project "Tools and Methods for System Complex Engineering in Industrie 4.0"
✉ saadia.dhouib@cea.fr
- **Prof. Patrick BELLOT**, Director of the CCN team of LTCI, INFRES department, Télécom-Paris
Direct supervisor in the project "OPC UA PubSub for Caméléon"
✉ patrick.bellot@telecom-paris.fr
- **Dr. Jean-Pierre CHANET**, Director of UR TSCE, MathNUM department, INRAE
Director of the thesis "Interoperability and Upgradability Improvement for Context-Aware Systems in Agriculture 4.0"
✉ jean-pierre.chanet@inrae.fr